

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Please amend claims 1, 3 and 4. Add claim 38 and cancel claim 2 as follows. All pending claims, whether or not amended, are presented below for the Examiner's convenience.

1. (Amended) A particle analyzing apparatus for analyzing a sample comprising:
an elongated capillary ~~channel~~ having a predetermined internal cross-sectional area, said ~~channel~~ capillary having first and second ends,

a pump connected to the first end of the capillary, ~~channel for drawing the second end of the capillary being suspended for emersion into the sample, said pump serving to draw sample~~ into the second end of the capillary channel and through the capillary channel to cause particles to flow along said capillary channel,

a light source for illuminating a predetermined length of the capillary channel to illuminate the volume of sample in said predetermined length, and

at least one detector for detecting fluorescent light emitted by particles in said volume of samples excited by the illumination impinging upon particles in said predetermined volume.

2. (cancelled)

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3. (currently amended) A particle analyzing apparatus as in claim 2 ~~1~~ in which the capillary ~~channel~~ cross-section is ~~eylindrical~~ circular.

4. (currently amended) A particle analyzing apparatus as in claim 2 ~~1~~ in which the capillary ~~channel~~ cross-section is rectangular.

5. (previously presented) A particle analyzing apparatus as in claim 2 including an additional detector for detecting all particles flowing along said capillary tube.

6. (previously presented) A particle analyzing apparatus for analyzing a sample as in claim 5 in which said additional detector detects light scattered by particles in said predetermined length.

7. (previously presented) A particle analyzing apparatus as in claim 5 in which said at least one detector detects a change in impedance caused by said flowing particles.

8. (previously presented) A particle analyzing apparatus for analyzing a sample as in claim 1 in which said detector for detecting fluorescent light includes a lens for intercepting fluorescent light, and
a slit located at the focus of the lens for blocking unwanted light from said detector.

9. (previously presented) A particle analyzing apparatus for analyzing a sample as in claim 8 including an additional detector for detecting light scattered by the particles in said volume.

10. (previously presented) A particle analyzing apparatus for analyzing a sample as in claim 6 or 9 in which said particle detector includes a beam blocker for blocking direct light whereby said detector receives only scattered light.

11. (previously presented) A particle analyzing apparatus for analyzing a sample as in claims 6 or 9 in which the particle detector is an off-axis detector.

C1. 34. (previously presented) A particle analyzing apparatus as in claim 1 in which the predetermined internal cross sectional area of said capillary is such as to cause substantially all particles to singulate as they pass through the illuminated length.

35. (presently presented) A particle analyzing apparatus as in claim 1 including:
means for gathering fluorescent light emitted by particle in said illuminated length,
a beam splitter for receiving said gathered light and reflecting light above a predetermined wavelength and passing light below said predetermined wavelength, and
in which said at least one detector includes:
a first detector for receiving the transmitted light and providing a first output signal for particles tagged to emit light below said predetermined wavelength, and
a second detector for receiving the reflected light and providing a second output signal for particles tagged to emit light above said predetermined wavelength.

36. (previously presented) A particle analyzing apparatus as in claim 35 in which said predetermined wavelength is 620 nm, said light below said predetermined wavelength is 580 nm, and above said predetermined wavelength is 675 nm.

37. (previously presented) A particle analyzing apparatus as in claim 35 including a filter interposed between the beam splitter and each detector for passing light at 580 nm and 675 nm, respectively.

38. (new) The method of analyzing particles in a liquid sample comprising the steps of:
selecting a capillary having an internal diameter which will singulate particles as the sample flows through the capillary;

immersing one end of the capillary in the liquid sample;

drawing liquid sample through the capillary by pumping from the other end of the capillary;

illuminating a predetermined length of said capillary to define a volume of sample in the capillary; and

detecting fluorescent signals generated by particles flowing through said illuminated volume.